



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

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OFFICE OF
ENVIRONMENTAL CLEANUP

September 7, 2010

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Reply To: ECL-111

Marko Adzic
Teck American Incorporated
501 North Riverpoint Boulevard, Suite 300
Spokane, Washington 99202

RE: July 2009 Baseline Ecological Risk Assessment Work Plan– EPA Comments

Dear Mr. Adzic:

With this letter EPA is disapproving the second draft Baseline Ecological Risk Assessment (BERA) Work Plan dated July, 2009. EPA is also transmitting its comments on the second draft BERA Work Plan. Consistent with Paragraph 9 of the June, 2006 Settlement Agreement Teck American Incorporated (Teck) must fully correct all deficiencies and incorporate and integrate all information and comments supplied by EPA within thirty (30) days of receipt of this letter. EPA's overarching concerns are summarized below. Detailed comments are included in the enclosed table, and replacement text for Chapters 1, 2, and 3 are provided in a separate enclosure.

Teck's revised draft document is focused on metals. As you know, contamination at the Site is not limited to metals. Although some contaminants were eliminated in the Screening Level Ecological Risk Assessment, many organic contaminants were retained. Organic chemicals must be included in problem formulation and risk assessment planning of the BERA Work Plan. It is also unclear in the document how Teck intends to address chemicals for which there are no appropriate benchmarks. Chemicals that do not have benchmarks must be addressed in the uncertainty section of the BERA and discussed relative to actual toxicity found at the Site.

Modeled data is not certain enough to exclude chemicals from the benthic invertebrate risk assessment. EPA expects that empirical data will be collected (i.e., sediment toxicity test data) and that the models proposed (including the Biotic Ligand Model and Acid Volatile Sulfide / Simultaneously Extractable Metals measures) will be used to explain or "diagnose" the cause of the toxicity.

The study summaries presented in Section 3.2 were incomplete. In many cases the summaries omitted findings of the study authors. Replacement text is provided in an enclosure.

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Teck must replace sections 1, 2, and 3 of the July 2009 BERA Work Plan version with the enclosed EPA language in its next submittal of the BERA Work Plan.

Extensive discussions between EPA and Teck have taken place since the draft BERA Work Plan was produced. EPA has provided Teck with level of effort papers for both sturgeon and sediment, and approved Quality Assurance Project Plans for toxicity testing with white sturgeon. The BERA Work Plan is an overarching document and as such, does not need to go into the level of detail provided in the level of effort papers or the QAPP. However, the BERA Work Plan must be consistent with the level of effort papers or any agreements that Teck and EPA have reached to date on the sampling programs planned for 2010 and beyond. Several sections of the draft Work Plan need to be updated to reflect existing agreements.

The draft BERA Work Plan calls for too many Scientific Management Decision Points (SMDPs), and uses the term inappropriately in many places. The only acceptable SMDPs are those specifically called out in EPA Guidance, as indicated on Figure 1-2 of the draft BERA Work Plan. Many SMDPs in the draft BERA Work Plan should be presented to EPA as technical memorandum or other brief communications, rather than as SMDPs. EPA is also concerned that the large number of technical memorandums currently planned will be unwieldy. Teck should look for opportunities to consolidate or group the planned technical memorandums where possible.

Clearly, slag and its potential impacts will be a focus in the risk assessment. It is, therefore, necessary to include a discussion on slag that explains the processes that created the slag observed in the upper portion of the UCR Site, and the basic physical and chemical properties of slag. Section 2 and/or Appendix D would be a logical place for this discussion. Additional comments regarding the characterization of slag are provided in specific comments referring to Appendix D.

EPA requested that Teck address the issue of data quality in the BERA Work Plan. The level of analysis presented in the document is appropriate for describing the Site and indentifying data gaps. However, the level of analysis presented is not sufficient to determine what data may or may not be used in the final risk calculations for the Site. Therefore, EPA's revision of Chapter 3 of the draft BERA Work Plan deletes references to the categorization of data. Likewise, conclusions regarding the quality and utility of data sets in the BERA should be qualified in other discussions (e.g., Appendices D, E, and F), or simply removed. Decisions about the quality and utility of existing data sets in the baseline risk assessment will depend on the uses proposed, and will need to be made in consultation with EPA.

Sturgeon and mussels are presented awkwardly in the document. Sturgeon is highlighted as a receptor of special concern in the settlement agreement, and extensive toxicity studies are planned to aid in the assessment of risk to sturgeon. Mussels are an important prey item for sturgeon, and their exposure to contaminants in sediment is different than that of other benthic invertebrates. Sturgeon and mussels must be identified as separate measurement endpoints in the risk assessment. The BERA Work Plan should be transparent regarding the risk assessment approach and the studies that will be needed to assess risk to these resources, and they should be

addressed early in the process. Additional specific issues regarding sturgeon and mussels are provided in comments referring to Tables 4-5, 4-6, 5-1, and Section 6-4.

The BERA Work Plan addresses the issue of background inconsistently. The document must include a clear proposal as to how and when background/reference will be assessed for each media type, consistent with EPA guidance on background. Further specific comments regarding background evaluations are provided in reference to Section 5.1.1.6, Figure 5-5, and elsewhere.

The rationale behind the phasing of additional studies proposed in the BERA Work Plan is not clear and there are inconsistencies between the text and the figures. The phasing of studies needs to be supported by a clear decision framework. Some specific comments about phasing are included in the detailed comment table in reference to Section 7.

Results were presented throughout the draft BERA Work plan without sufficient explanations of the data used, details of the evaluation methodology, or documentation of statistical analyses to permit a thorough review of the data and interpretations. In all future deliverables where data analyses are presented, EPA will require sufficient information about the work performed to allow a reasonably experienced scientist to repeat the analysis and get the same results. The lack of transparency / repeatability / statistical clarity in this version of the BERA Work Plan was noted by many reviewers.

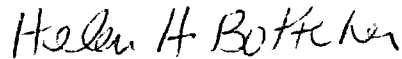
EPA does not necessarily agree with, nor was it able to adequately review many of the analyses presented in the appendices for reasons stated above. Therefore, qualifying language is being requested in the introduction of each Appendix that will qualify these discussions and analyses as preliminary, adequate for the purposes of the BERA Work Plan, but with data (and analyses methods) that are yet to be agreed upon. Some of EPA's comments related to the appendices will need to be addressed, and others are provided for your information to more clearly relay EPA's expectations for all future documents that contain data analyses. These later comments are marked with the word "TRACK" so they can be tracked and addressed in future deliverables.

While Chapter 4 provides a preliminary baseline problem formulation, a comprehensive problem formulation narrative needs to be developed. Elements of the problem formulation (i.e., description of complete exposure pathways; selected assessment endpoints; risk hypotheses/risk questions associated with each assessment endpoint; candidate measurement endpoints; and a risk analysis and uncertainty analysis plan) are presented throughout the draft BERA Work Plan, but in a confusing and sometimes inconsistent manner. Specific comments referring to Tables 4-5, 4-6, and 5-1 offer recommendations to further help reduce some of this confusion.

EPA expects that a more detailed Problem Formulation document will be developed following approval of the BERA Work Plan. The Problem Formulation document should expand on the level of detail provided in the BERA Work Plan to provide a complete list of assessment endpoints, risk questions, and measurement endpoints as well as a detailed risk analysis plan that describes the methods that will be used in the BERA to evaluate exposure, evaluate effects, and characterize risks to each assessment endpoint and receptor group.

Should you have questions about the comments provided with this letter, EPA would be happy to meet with you and your technical staff to ensure that the intent and meaning of our comments is clearly understood and that Teck has all the information needed to produce a final, approvable BERA Work Plan. EPA's required changes are substantial and will require careful thought and editing in multiple sections of the current draft BERA Work Plan. If Teck needs more than 30 days to make the required changes, it should make the request in writing.

Sincerely,

A handwritten signature in cursive script that reads "Helen H. Bottcher".

Helen Bottcher
Project Manager

cc: Dan Audet, U.S. Department of the Interior
Patti Bailey, Confederated Tribes of the Colville Reservation
Randy Connolly, Spokane Tribe of Indians
John Roland, Washington State Department of Ecology